TEST REQUEST FORM

Sample/Specimen No. 0-055 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
MOISTURE	1	ETAL-14
N/A	NA	N/A

Remarks FIELD SAMPLE MW-17-1

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G ALEXANDER Date 2-12-90

SIEVE ANALYSIS DATA SHEET

Sample ID 0-055 Page 1 of 1

Tested By R.G ALEXANDER Date 2-12-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90 Rec 2-13-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) (A)

BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B}$ X 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A	3	4533.05	1051.50	23.2	23.2	76.8	76.8
	2 1/2		1051.50	23.2	23.2	76.8	76.8
	2		1051.50	23.2	23.2	76.8	76.8
	1 1/2		1051.50	23.2	23.2	76.3	76.8
	1		1545.88	34.1	34.1	65.9	65.9
	3/4		1706.79	37.7	37.7	62.3	62.3
	1/2		1881.35	41.5	41.5	58.5	58.5
	3/8		1980.21	43.7	43.7	54.3	56.3
	#4		2224.32	49.1	49.1	50.9	50.9
	#10	4533.05	2565.47	56.6	56.6	43.4	43.4
	#40	115.01	33.11	28.8	28.8	71.2	30.9
	#60		52.25	45.4	45.4	54.6	23.7
	#100		69.00	60.0	60.0	40.0	17.4
	#200		83.30	72.4	72.4	27.6	12.0

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 27.6 %

D=Original Dry Weight of Sample 115.01 g

E=Dry Weight of Sample After Washing/Sieve 8330 g

C = <(D-E)/D> X 100

Remarks
WASH FINE GRADING
SMALL FIELD
SAMPLE

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

Checked By H L Benny Date 2-13-90

A-6400-204(2-87)

9212136

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETHL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-055	5506.09	5389.61	866.56	4649.53	4528.05	2.57

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G ALEXANDER DATE 2-12-90

HYDROMETER ANALYSIS DATA SHEET

Sample ID 0-055 Page 1 of 1

Tested By HL Benny Date 3/8/90

Procedure _____ Rev _____ Date Issued _____

EQUIPMENT ITEM	NO.	CALIBRATION DUE DATE
Hydrometer	1000	2-16-91
Balance	3304	3-25-90
Thermometer/Thermocouple	0002	2-9-91

Specific gravity of Sample 2.74

% Passing No. 10 Sieve 43.4 (%)

Hygroscopic Correction Factor 0

WEIGHT OF SAMPLE

Wt. Container + Soil NA (g)

Wt. Container NA (g)

Wt. Soil 67.93 (g)

COMPOSITE CORRECTION

1st Reading 7 at 24.2 °C

2nd Reading NA at NA °C

HYGROSCOPIC MOISTURE CONTENT

Wt. Container + Air Dry Soil NA (g)

Wt. Container + Oven Dry Soil NA (g)

Wt. Container NA (g)

Water Content NA (%)

REMARKS

Tube A

W=156.52

Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
3-8-90	0837	2.0	24	17 HKB 3-8-90	23.0	10.6	0.032
	0840	5.0	22	15	22.8	9.4	0.020
	0850	15.0	18	11	22.7	6.9	0.012
	0905	30.0	16	9	23.4	5.6	0.009
	0935	60.0	13	6	22.5	3.8	0.006
	1245	250.00	10	3	22.7	1.9	0.003
3-9-90	0835	1,440.0	8	1	22.4	0.6	0.001

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By R.G Alexander Date 3-14-90

A-6400-205 (1.87)

SPECIFIC GRAVITY OF SOILS DATA SHEET

Specimen/Sample No. O-055 Page 1 of 1

Test Operator R. G. ALEXANDER 3-6-90

EQUIPMENT ITEM	NO.	DATE DUE
Balance	3304	3-25-90
Oven Thermometer	0007	8-16-90
Thermometer	0002	2-9-91
Pycnometer	2554	N/A

Wetting Agent "Q" WATER

	DETERMINATION NO.	1	2	3
	Drying Container No.	N/A	N/A	N/A
	Wt. Container + Oven Dry Soil, ± 0.01g	N/A		
	Wt. Container, ± 0.01g	N/A		
W_o	Wt. Oven Dry Soil, g	40.00		
	Pycnometer No.	2554		
	Wt. Pycnometer, g	135.12		
W_a	Wt. Pycnometer + Wetting Agent, g	387.11		
W_b	Wt. Pycnometer + Wetting Agent + Soil, g	412.58		
	Temperature, T_x at W_b, °C	26.2 C		
G_w	Specific Gravity of Wetting Agent at T_x	1.00		
G_t	Specific Gravity of Soil at T_x	2.75		
G_s	Specific Gravity of Soil at 20°C	2.74		

$$G_t = \frac{G_w * V_w * W_o}{W_o + (W_a - W_b)}$$

Y_w = Unit Weight Of Water (g/cc)

*$G_s = K * G_t$

K values found in ASTM D854-58, Table 1

*NOTE $G_s = G_t$ When Test Run at 20 °c

Average Specific Gravity At 20°c	2.74

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

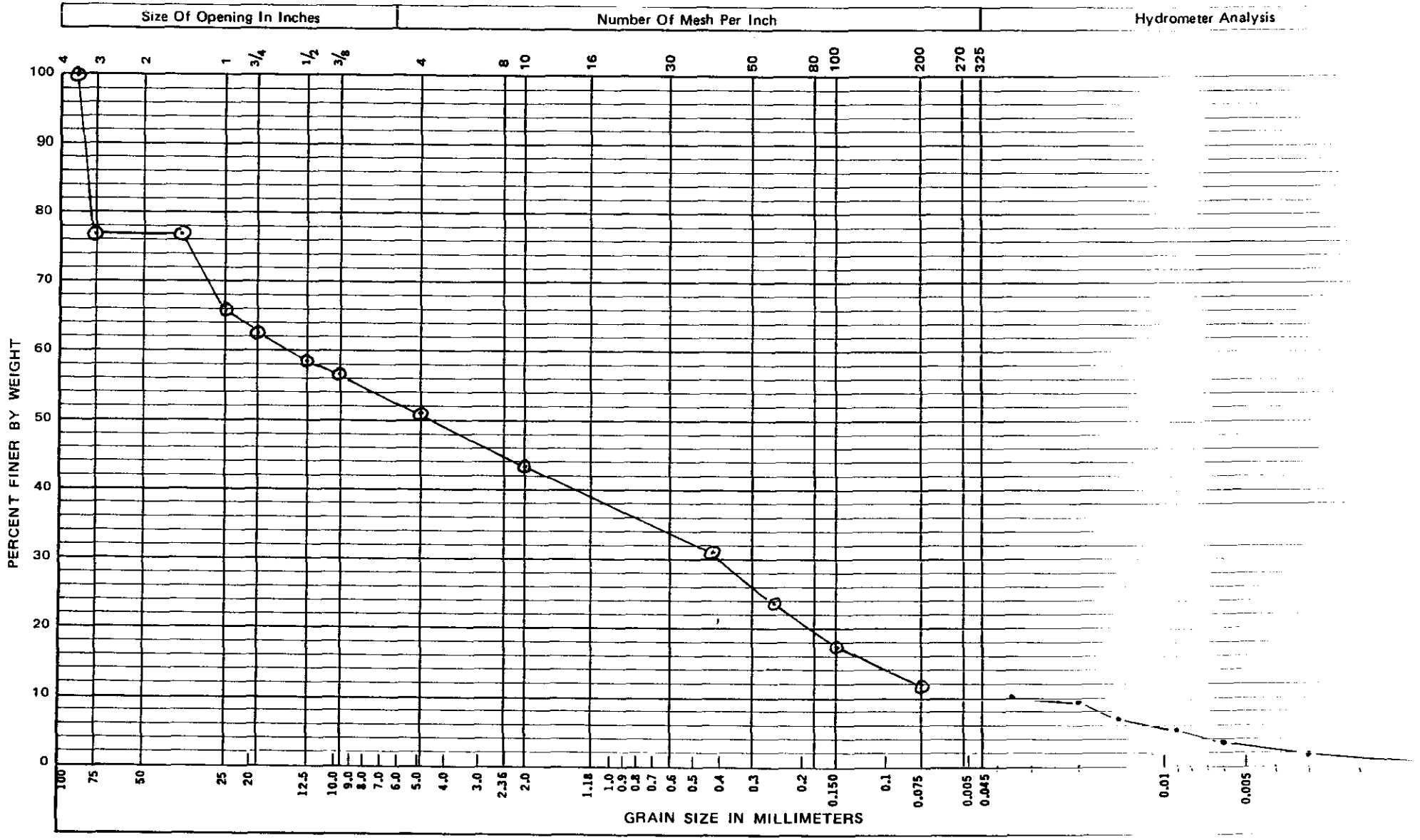
Checked By H C Benny Date 3-7-90

A-6400-235 (9-86)

9211369

9 2 1 2 [illegible] 0 7 0

GRAIN SIZE ANALYSIS PLOT



Specimen No. D-055 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: SANDY GRAVEL
MW-17-1

Plotted by: R.G. ALEXANDER
Date: 2-12-90

Checked by: HL Benny
Date: 2-13-90

Approved by: NA
Date

BD-6400-136 (9-85)

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

9211237.1

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/11/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW#1	Soil	
	MW#2	"	
	MW#3	"	
	MW#4	"	

Analysis Requested Particle Size Analysis and Moisture Contents

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

Revision 0
Date September 1986

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

MW-17-1

54-3000-022 (5 – 57)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

MW-17-2

54-3000-022 (5 – 57)

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

MW-17-4

54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

~~Bldg.~~ well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

MW-17-7 37'-38'

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

~~Bldg.~~ MW-17/3000 Date 1/19/90

Released By [illegible]
Operational Health Physics

Remarks <D β-d γ

MW-17-8

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No. 0-056 Cost Code/Work Order No. ED332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
MOISTURE	1	ETAL-14
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-2

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G. ALEXANDER Date 2-12-90

9212074

SIEVE ANALYSIS DATA SHEET

Sample ID 0-056 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-12-90

Procedure ETAL-07 Rev 1 Date Issued 1-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) (A)
BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B}$ X 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A	2½	4541.36	478.14	10.5	10.5	89.5	89.5
	2		478.14	10.5	10.5	89.5	89.5
	1½		1027.06	22.6	22.6	77.4	77.4
	1		1665.32	36.7	36.7	63.3	63.3
	¾		2068.79	45.6	45.6	54.4	54.4
	½		2452.06	54.0	54.0	46.0	46.0
	⅜		2681.31	59.0	59.0	41.0	41.0
	#4		3017.66	66.4	66.4	33.6	33.6
	#10	4541.56	3285.60	72.3	72.3	27.7	27.7
	#40	136.73	66.19	48.4	48.4	51.6	14.3
	#60		86.82	63.5	63.5	36.5	10.1
	#100		98.05	71.7	71.7	28.3	7.8
	#200		108.07	79.0	79.0	21.0	5.8

Finess Modules (FM) _____ (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 21.0 %

D=Original Dry Weight of Sample 136.73 g

E=Dry Weight of Sample After Washing/Sieve 108.07 g

C = <(D-E)/D> X 100

Remarks
AASHTO FINE GRADING
SMALL FIELD
SAMPLE

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

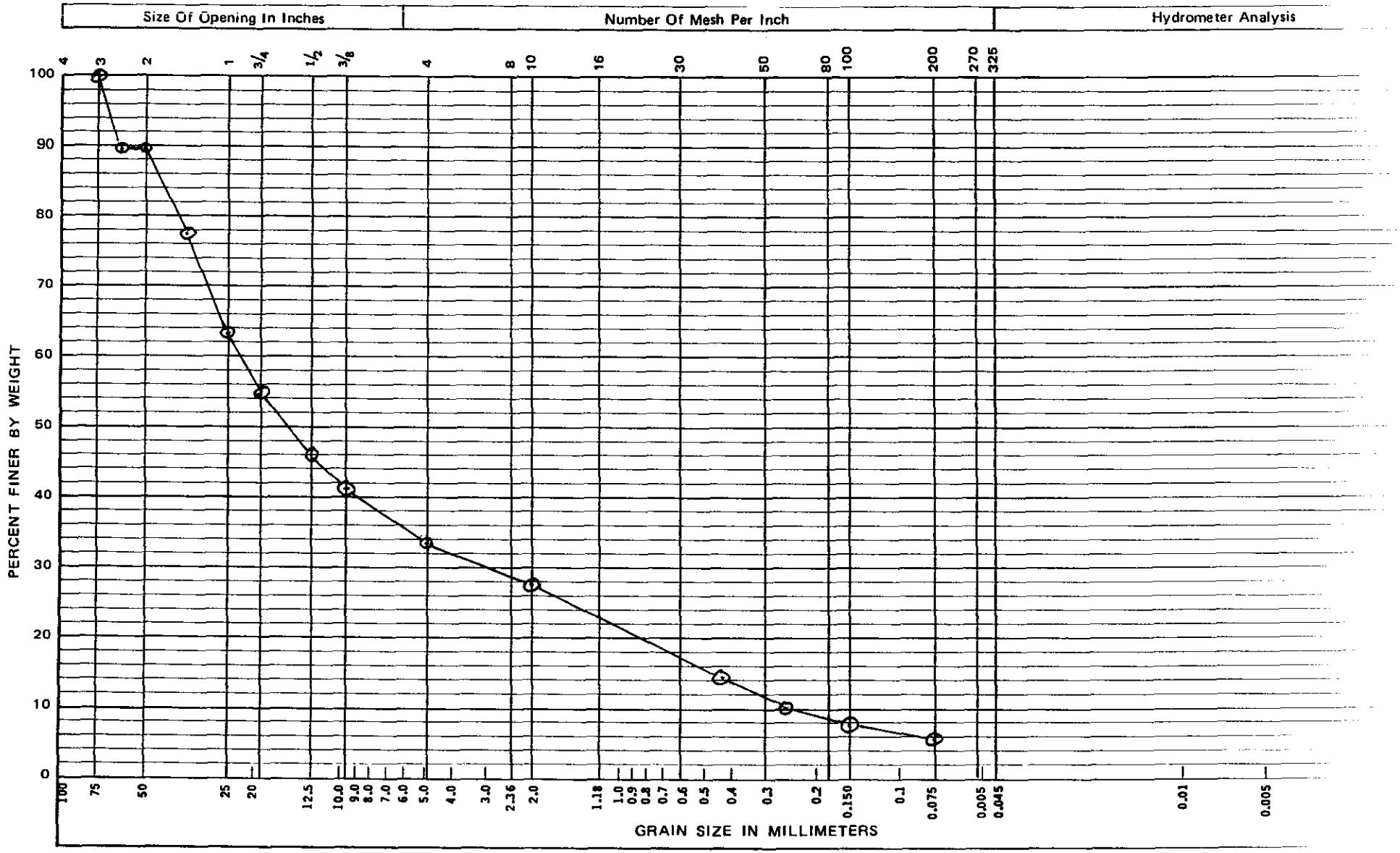
Checked By HC Berry Date 2-13-90

A-6400-204(2-87)

9211275

9 2 1 2 [illegible] 0 1 7 6

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-056 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description:	Plotted by:	Checked by:	Approved by:
SANDY GRAVEL MW-17-2	P.G. ALEXANDER	H.C. Benn	NA
	Date: 2-12-90	Date: 2-13-90	Date

BD-6400-136 (9-85)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-056	5456.48	5377.32	835.76	4620.72	4541.56	1.74

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G ALEXANDER DATE 2-12-90

9212110177

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1	double-lined plastic bag
MW-17-2	" " " "
MW-17-3	" " " "
MW-17-4	" " " "
MW-17-5	" " " "
MW-17-6	" " " "
MW-17-7	" " " "
MW-17-8	" " " "
MW-17-9	" " " "
MW-17-10	" " " "
MW-17-11	" " " "
MW-17-12	triple-lined plastic bag

9212-1378

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER RG Alexander	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/11/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-1	Soil	
	MW-2	"	
	MW-3	"	
	MW-4	"	

Analysis Requested Particle Size Analysis and Moisture Contents

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-1

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-2

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

MW-17-4

54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

~~Bldg.~~ well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on out-side of bag.

54-3000-022 (09/88)

MW-17-7 37-38

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

~~Bldg.~~ MW-17/3000 Date 1/19/96

Released By [illegible]
Operational Health Physics

Remarks LD β⁻ d 4

54-3000-022 (09/88)

MW-17-8

TEST REQUEST FORM

Sample/Specimen No. D-057 Cost Code/Work Order No. ED-332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
MOISTURE	1	ETAL-14
N/A		N/A

Remarks FIELD SAMPLE MW 17-3

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G. ALEXANDER Date 2-12-90

9212-0281

SIEVE ANALYSIS DATA SHEET

Sample ID 0-057 Page 1 of 1

Tested By R. G. ALEXANDER Date 2-12-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) (A)
BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B} \times 100$ = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A	2 1/2	4559.53	571.33	12.5	12.5	87.5	87.5
	2		571.33	12.5	12.5	87.5	87.5
	1 1/2		571.33	12.5	12.5	87.5	87.5
	1		1012.69	22.2	22.2	77.8	77.8
	3/4		1245.58	27.3	27.3	72.7	72.7
	1/2		1542.47	33.8	33.8	66.2	66.2
	3/8		1799.25	39.5	39.5	60.5	60.5
	#4		2012.26	44.1	44.1	55.9	55.9
	#10	4559.53	2477.84	54.3	54.3	45.7	45.7
	#40	128.74	40.57	31.5	31.5	68.5	31.3
	#60		77.68	60.3	60.3	39.7	18.1
	#100		91.73	71.3	71.3	28.7	19.1
	#200		102.71	79.8	79.8	20.2	9.2

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 20.2 %

D=Original Dry Weight of Sample 128.74 g

E=Dry Weight of Sample After Washing/Sieve 102.71 g

C = <(D-E)/D> X 100

Remarks
WASH FINE GRADING
SMALL FIELD
SAMPLE

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

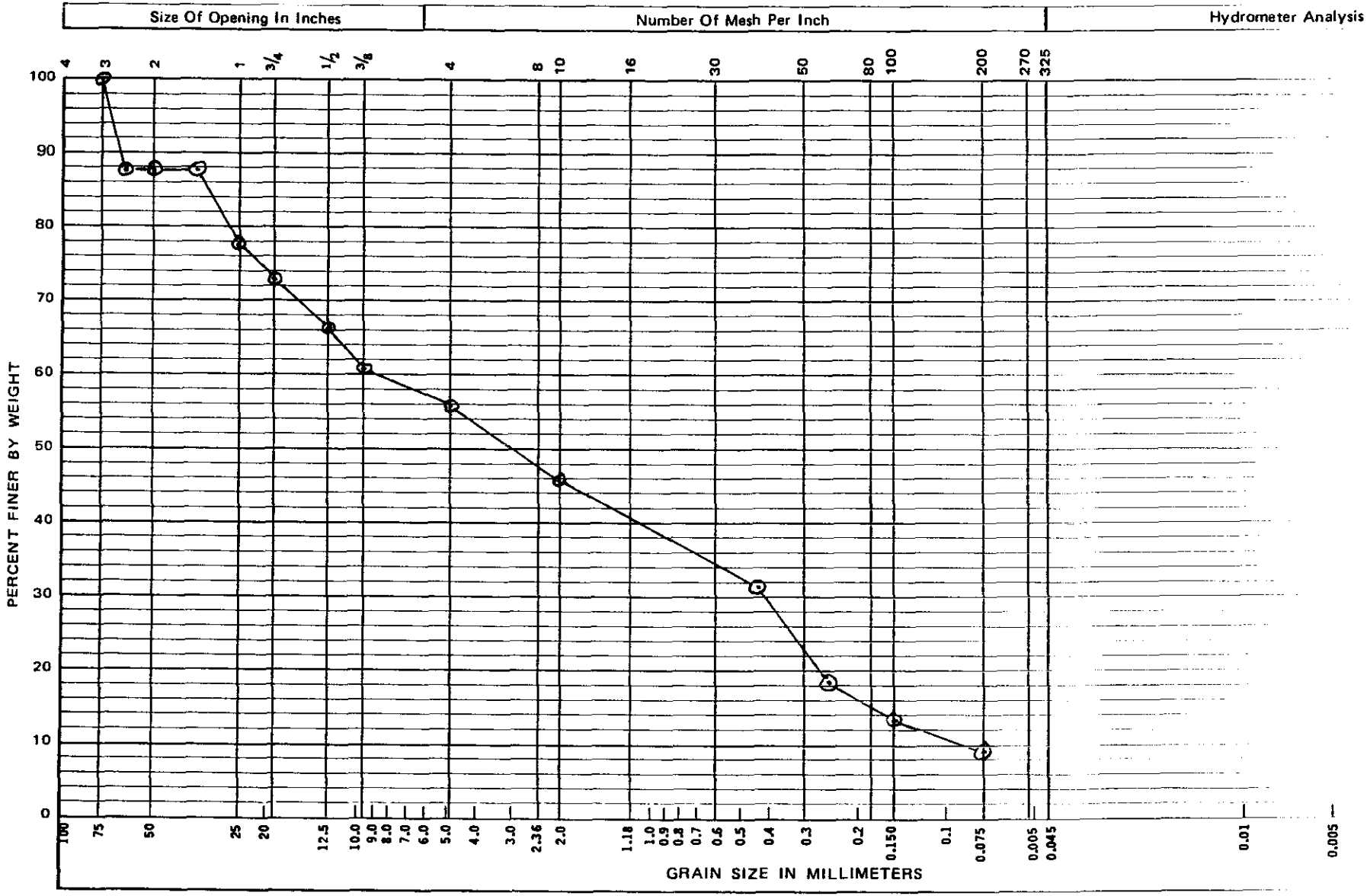
Checked By H L Benny Date 2-13-90

A-8400-204(2-87)

9212132

9212 [illegible] 0233

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-057 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: SANDY GRAVEL
MW17-3

Plotted by: R. G. ALEXANDER
Date: 2-12-90

Checked by: HL Benny
Date: 2-13-90

Approved by: NA
Date

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-057	5514.24	5389.11	829.58	4684.66	4559.53	2.74

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER DATE 2-12-90

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 – 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 Operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

9212170195

Chain of Possession

Relinquised by:	Received by:	Date/Time:
DC Weekes	RG Alexander	2-2-90 / 10:20
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/11/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-1	Soil	
	MW-2	"	
	MW-3	"	
	MW-4	"	

Analysis Requested Particle Size Analysis and Moisture Contents

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

RADIATION RELEASE

~~BLDG.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

54—3000—022 (5—57) MW-17-1

RADIATION RELEASE

~~BLDG.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

54—3000—022 (5—57) MW-17-2

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

MW-17-4 54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

~~Bldg.~~ Well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

MW-17-7 37'-38'

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By BOYD
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

MW-17/3000 Date 1/19/90

Released By Weeds

Operational Health Physics

Remarks <D β γ α

MW-17-8 54-3000-022 (09/88)

9 2 1 2 1 1 3 8 7

TEST REQUEST FORM

Sample/Specimen No. 0-058 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (CF REQ)
MOISTURE	1	ETAL-14
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-4

Received By: R.G. ALEXANDER Date 2-2-90

Approved By: R.G. ALEXANDER Date 2-12-90

SIEVE ANALYSIS DATA SHEET

Sample ID 0-058 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-12-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) (A)
BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B}$ X 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A	2	4307.37	Ø	Ø	Ø	100	100
	1 1/2		Ø	Ø	Ø	100	100
	1		423.80	9.8	9.8	91.2	91.2
	3/4		601.06	14.0	14.0	86.0	86.0
	1/2		817.64	19.0	19.0	81.0	81.0
	3/8		931.85	21.6	21.6	78.4	78.4
	#4		1108.54	25.7	25.7	74.3	74.3
	#10	4307.37	1264.26	29.4	29.4	70.6	70.6
	#40	155.49	3086	19.8	19.8	80.2	56.6
	#60		1067.6	68.7	68.7	31.3	22.1
	#100		131.18	84.4	84.4	15.6	11.0
	#200		142.66	91.7	91.7	8.3	5.9

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 8.3 %

D=Original Dry Weight of Sample 155.49 g

E=Dry Weight of Sample After Washing/Sieve 142.66 g

C = <(D-E)/D> X 100

Remarks
WASH FINE GRADING
SMALL FIELD SAMPLE

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

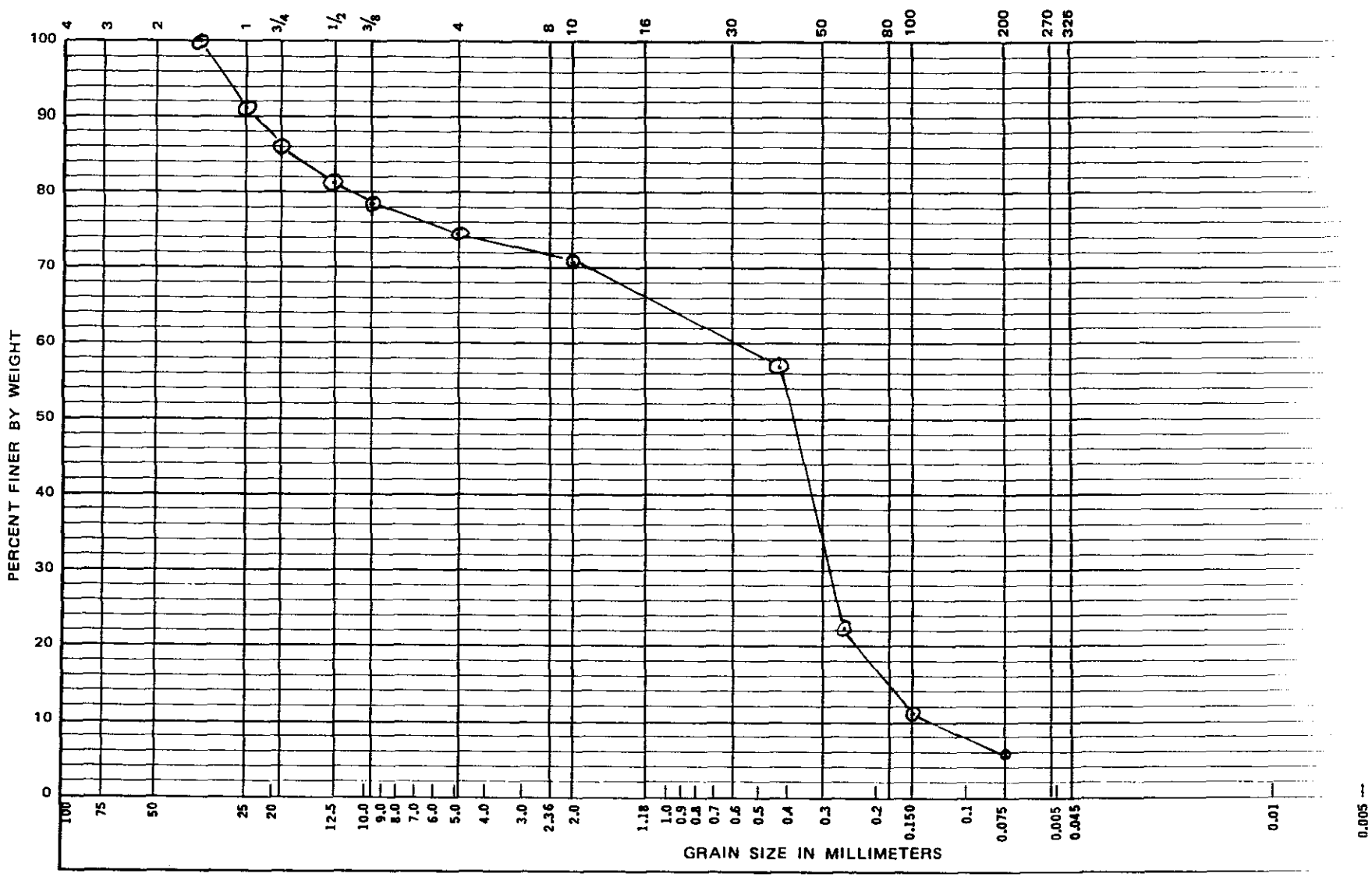
Checked By HLBenn Date 2-13-90

A-6400-204(2-87)

9211-1399

9 2 1 2 1 1 0 0 9 0

GRAIN SIZE ANALYSIS PLOT



Specimen No. Q-058 Procedure No ETAC-07 Rev. 1 Date Issued 11-15-89

Sample Description: SANDY GRAVEL MW-17-4

Plotted by: R.G. ALEXANDER Date: 2-12-90

Checked by: H.C. Benny Date: 2-13-90

Approved by: NA Date

BD-6400-136 (9-85)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAC-14 REV. NO. 0

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-058	5094.71	4885.43	578.06	4516.65	4307.37	4.86

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER DATE 2-12-90

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

Chain of Possession

Relinquised by:	Received by:	Date/Time:
DC Weekes DC Weekes	RG ALEXANDER RG Alexander	2-2-90 / 10:20
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:

A-6000-407 (07/89)

9211192

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 7/11/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-1	Soil	
	MW-2	"	
	MW-3	"	
	MW-4	"	

Analysis Requested Particle Size Analysis and Moisture Contents

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

Revision 0
Date September 1986

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-1

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-2

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

MW-17-4

54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

~~Bldg.~~ well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-7 37-38

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

MW-17/3000 Date 1/19/96

Released By [illegible]
Operational Health Physics

Remarks LD β-2 -1 γ

54-3000-022 (09/88)

MW-17-8

TEST REQUEST FORM

Sample/Specimen No. 0-059 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-5

Received By: R.G ALEXANDER Date 2-2-90

Approved By: RG ALEXANDER Date 2-12-90

SIEVE ANALYSIS DATA SHEET

Sample ID O-059 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-12-90

Procedure EJAC-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SAND Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) (A)
BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B}$ X 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A							
	#10	118.62	Ø	Ø	Ø	100	100
	#40		9.52	8.0	8.0	92.0	92.0
	#60		63.81	53.8	53.8	46.2	46.2
	#100		89.60	75.5	75.5	24.5	24.5
	#200		102.10	86.1	86.1	13.9	13.9

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 13.9 %

D=Original Dry Weight of Sample 118.62g

E=Dry Weight of Sample After Washing/Sieve 102.10g

C = <(D-E)/D> X 100

Remarks
WASH FINE GRADING.

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

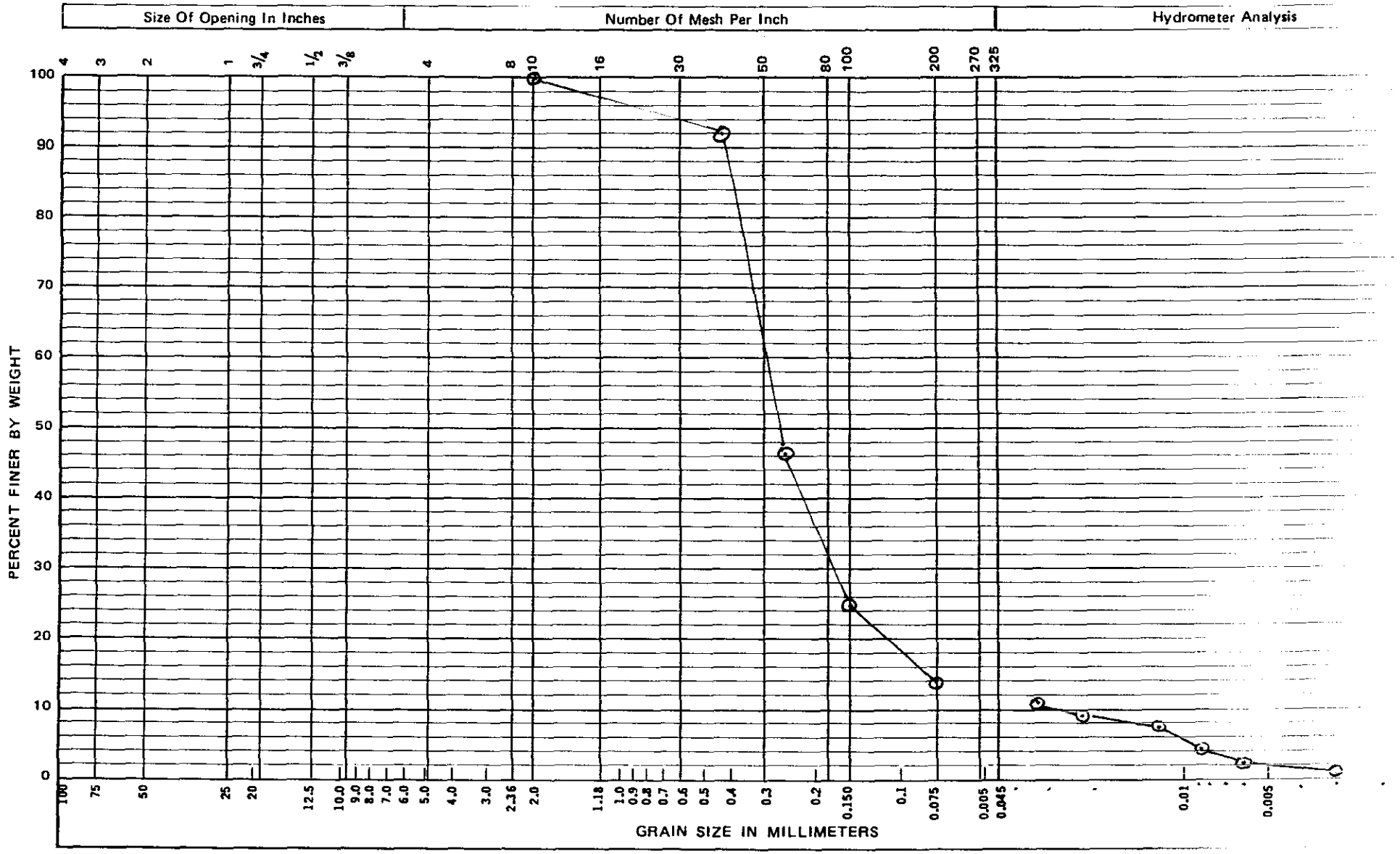
Checked By HL Benny Date 2-12-90

A-8400-204(2-87)

9211196

9212 [illegible] 97

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-059 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description:	Plotted by:	Checked by:	Approved by:
SAND MW-17-5	R.G ALEXANDER Date: 2-12-90	H.L Benny Date: 2-12-90	NA Date

BD-6400-136 (9-85)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. E7AL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-059	4603.27	4341.53	584.00	4019.27	3757.53	~~7.8~~ 7.97 ROA 2-12-90

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER DATE 2-12-90

HYDROMETER ANALYSIS DATA SHEET

Sample ID 0-059 Page 1 of 1

Tested By R.G. ALEXANDER Date 3-20-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	NO.	CALIBRATION DUE DATE
Hydrometer	1000	2-16-90
Balance	3304	3-25-90
Thermometer/Thermocouple	0002	2-9-91

Specific gravity of Sample 2.74

% Passing No. 10 Sieve 100 (%)

Hygroscopic Correction Factor N/A

WEIGHT OF SAMPLE

Wt. Container + Soil N/A (g)

Wt. Container N/A (g)

Wt. Soil 96.67 (g)

COMPOSITE CORRECTION

1st Reading 5 at 23.6 °C

2nd Reading N/A at N/A °C

HYGROSCOPIC MOISTURE CONTENT

Wt. Container + Air Dry Soil N/A (g)

Wt. Container + Oven Dry Soil N/A (g)

Wt. Container N/A (g)

Water Content N/A (%)

REMARKS

TUBE D

Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
3-20	1002	2.0	16	11	23.8	11.2	0.033
3-20	1005	5.0	14	9	23.8	9.1	0.021
3-20	1015	15.0	12	7	23.7	7.1	0.012
3-20	1030	30.0	9	4	23.8	4.1	0.009
3-20	1100	60.0	7	2	23.7	2.0	0.006
3-20	1410	250.00	6	1	24.5	1.0	0.003
3-21	1000	1,440.0	6	1	23.2	1.0	0.001

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By J F Relyea Date 3-22-90

SPECIFIC GRAVITY OF SOILS DATA SHEET

Specimen/Sample No. O-059 Page 1 of 1

Test Operator R.G ALEXANDER 3-6-90

EQUIPMENT ITEM	NO.	DATE DUE
Balance	3304	3-25-90
Oven Thermometer	0007	8-16-90
Thermometer	0002	2-9-91
Pycnometer	2554	N/A

Wetting Agent "D" WATER

	DETERMINATION NO.	1	2	3
	Drying Container No.	N/A	N/A	N/A
	Wt. Container + Oven Dry Soil, ± 0.01g	N/A .__	.__	.__
	Wt. Container, ± 0.01g	N/A .__	.__	.__
W_o	Wt. Oven Dry Soil, g	40.00	.__	.__
	Pycnometer No.	2554		
	Wt. Pycnometer, g	135.70	.__	.__
W_a	Wt. Pycnometer + Wetting Agent, g	387.09	.__	.__
W_b	Wt. Pycnometer + Wetting Agent + Soil, g	412.53	.__	.__
	Temperature, T_x at W_b, °C	25.2 C .	.	.
G_w	Specific Gravity of Wetting Agent at T_x	1.00	_.__	_.__
G_t	Specific Gravity of Soil at T_x	2.75	_.__	_.__
G_s	Specific Gravity of Soil at 20°C	2.74	_.__	_.__

$$G_t = \frac{G_w \cdot \gamma_w \cdot W_o}{W_o + (W_a - W_b)}$$

γ_w = Unit Weight Of Water (g/cc)

*$G_s = K \cdot G_t$

K values found in ASTM D854-58, Table 1

*NOTE $G_s = G_t$ When Test Run at 20 °c

Average Specific Gravity At 20°c	2.74

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HC Benny Date 3-7-90

A-6400-235 (9-86)

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

9212130101

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/14/90-1/16/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-17-5	Soil	
	MW17-6	"	
	MW17-7	"	
	MW17-8	"	

Analysis Requested MW-17-5 through MW-17-7 Particle Size Analysis and Moisture Content, MW-17-8 Particle Size Analysis

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

RADIATION RELEASE

BLDG. WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

MW-17-1

54-3000-022 (5-57)

RADIATION RELEASE

BLDG. WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

MW-17-2

54-3000-022 (5-57)

MW-17-3

RADIATION RELEASE

Bldg. WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

Bldg. WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

MW-17-4

54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

Bldg. Well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

Bldg. WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

MW-17-7 37'-38'

RADIATION RELEASE

Bldg. WELL #17 Date 01-12-90

Released By BOYD
Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

DRILL SITE MW-17/3000 Date 1/19/90

Released By [illegible]
Operational Health Physics

Remarks <D β-γ-α

MW-17-8

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No. 0-060 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW 17-6

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G ALEXANDER Date 2-12-90

9211-0204

SIEVE ANALYSIS DATA SHEET

Sample ID 0-060 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-12-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

(B) (A)
BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B} \times 100$ = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A	2"	4534.66	265.54	5.9	5.9	94.1	94.1
	1 1/2		443.88	9.8	9.8	90.2	90.2
	1		794.43	17.5	17.5	82.5	82.5
	3/4		925.10	20.4	20.4	79.6	79.6
	1/2		1009.80	22.3	22.3	77.7	77.7
	3/8		1054.59	23.3	23.3	76.7	76.7
	#4		1135.29	25.0	25.0	75.0	75.0
	#10	4534.66	1245.51	27.5	27.5	72.5	72.5
	#40	107.89	59.05	54.7	54.7	45.3	32.8
	#60		80.93	75.0	75.0	25.0	18.1
	#100		89.77	83.2	83.2	16.8	12.2
	#200		95.75	88.7	88.7	11.3	8.2

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 11.3 %

D=Original Dry Weight of Sample 107.89 g

E=Dry Weight of Sample After Washing/Sieve 95.75 g

C = <(D-E)/D> X 100

Remarks
WASH FINE GRADING
SMALL FIELD
SAMPLE

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

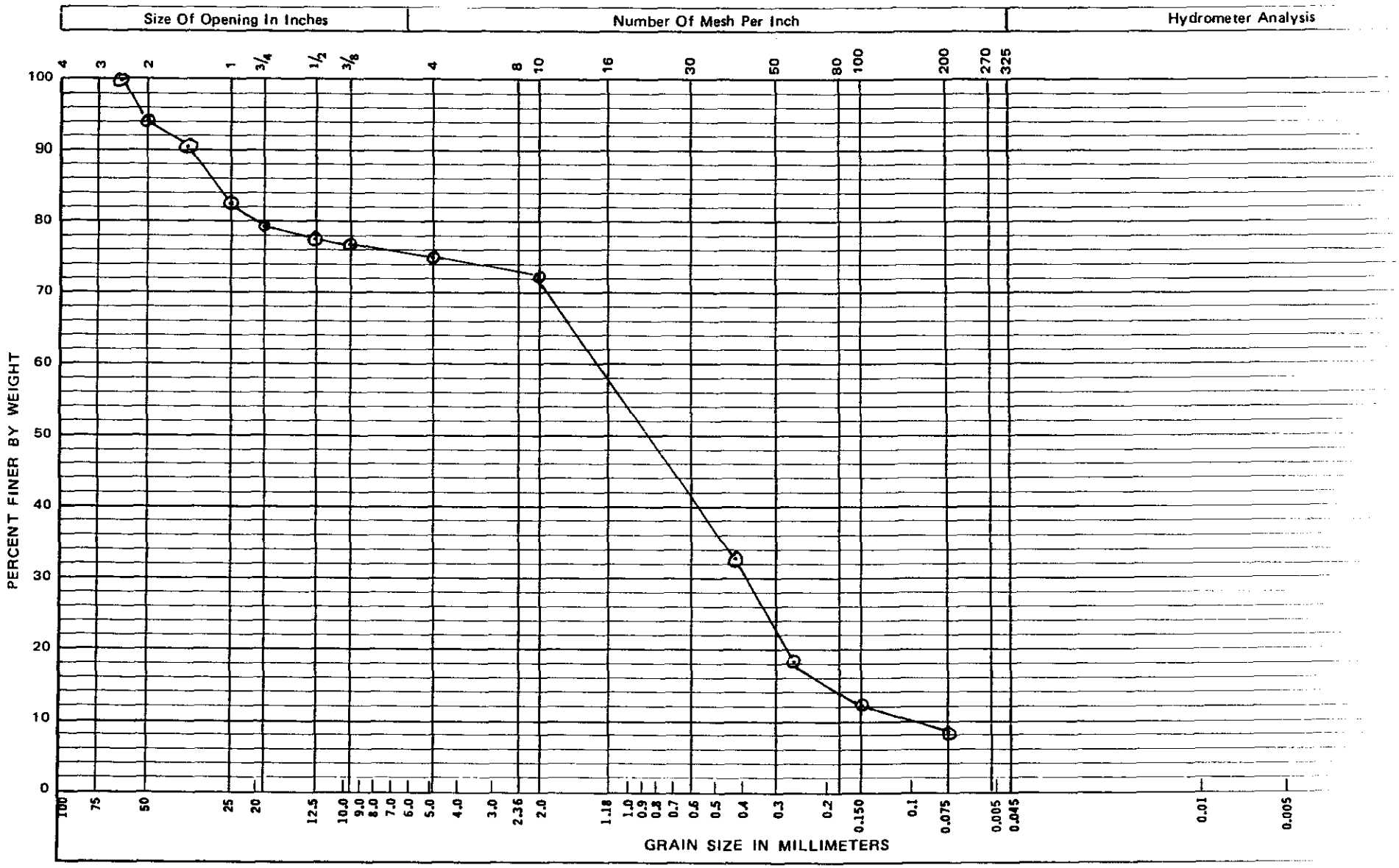
Checked By HL Benny Date 02-12-90

A-6400-204(2-87)

9212205

9 2 1 2 [illegible] 0 2 0 6

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-060 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: SANDY GRAVEL
MW-17-6

Plotted by: R. G. ALEXANDER
Date: 2-12-90

Checked by: HL Benny
Date: 2-12-90

Approved by: N/A
Date

BD-6400-136 (9-85)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. 0

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-060	5262.87	5124.05	589.39	4673.48	4534.66	3.06

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R. G. ALEXANDER DATE 2-12-90

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

Chain of Possession

Relinquised by:	Received by:	Date/Time:
DC Weekes DC Weekes	RG ALEXANDER RG Alexander	2-2-90 / 10:20
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:

A-6000-407 (07/89)

9212170208

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/14/90-1/16/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-17-5	Soil	
	MW17-6	"	
	MW-17-7	"	
	MW178	"	

Analysis Requested MW-17-5 through MW-17-7 Particle Size Analysis and Moisture Content, MW-17-8 Particle Size Analysis

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

Revision 0
Date September 1986

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β- γ on outside of BAG.

MW-17-1

54-3000-022 (5 – 57)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β- γ on outside of BAG.

MW-17-2

54-3000-022 (5 – 57)

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β- γ on outside of BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β- γ on outside of BAG.

MW-17-4

54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

~~Bldg.~~ well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β- γ on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β- γ on outside of bag.

54-3000-022 (09/88)

MW-17-7 37'-38'

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β- γ on outside of BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

~~Bldg.~~ MW-17/3000 Date 1/19/90

Released By [illegible]
Operational Health Physics

Remarks LD β-d-1 γ

MW-17-8

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No. O-001 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-12-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-7

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G ALEXANDER Date 2-12-90

9212-0211

SIEVE ANALYSIS DATA SHEET

Sample ID O-061 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-12-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3804	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SANDY GRAVEL Sieve Time 10 (min)

reduced by ☒ splitting ☒ quartering ☐ stockpile

BEFORE TEST WT. (B) N/A AFTER TEST WT. (A) N/A $\frac{B-A}{B} \times 100$ = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A	2	4438.93	678.03	15.3	15.3	84.7	84.7
	1½		943.64	21.3	21.3	78.7	78.7
	1		1360.82	30.7	30.7	69.3	69.3
	¾		1559.12	35.1	35.1	64.9	64.9
	½		1757.57	39.6	39.6	60.4	60.4
	⅜		1879.37	42.3	42.3	57.7	57.7
	#4		2073.12	46.7	46.7	53.3	53.3
	#10	4438.93	2312.77	52.1	52.1	47.9	47.9
	#40	137.84	84.48	61.3	61.3	38.7	18.5
	#60		104.04	75.5	75.5	24.5	11.7
	#100		111.90	81.2	81.2	18.8	9.0
	#200		117.82	85.5	85.5	14.5	6.9

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 14.5 %

D=Original Dry Weight of Sample 137.84 g

E=Dry Weight of Sample After Washing/Sieve 117.82 g

C = <(D-E)/D> X 100

Remarks

WASH FINE GRADING

SMALL FIELD SAMPLE

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

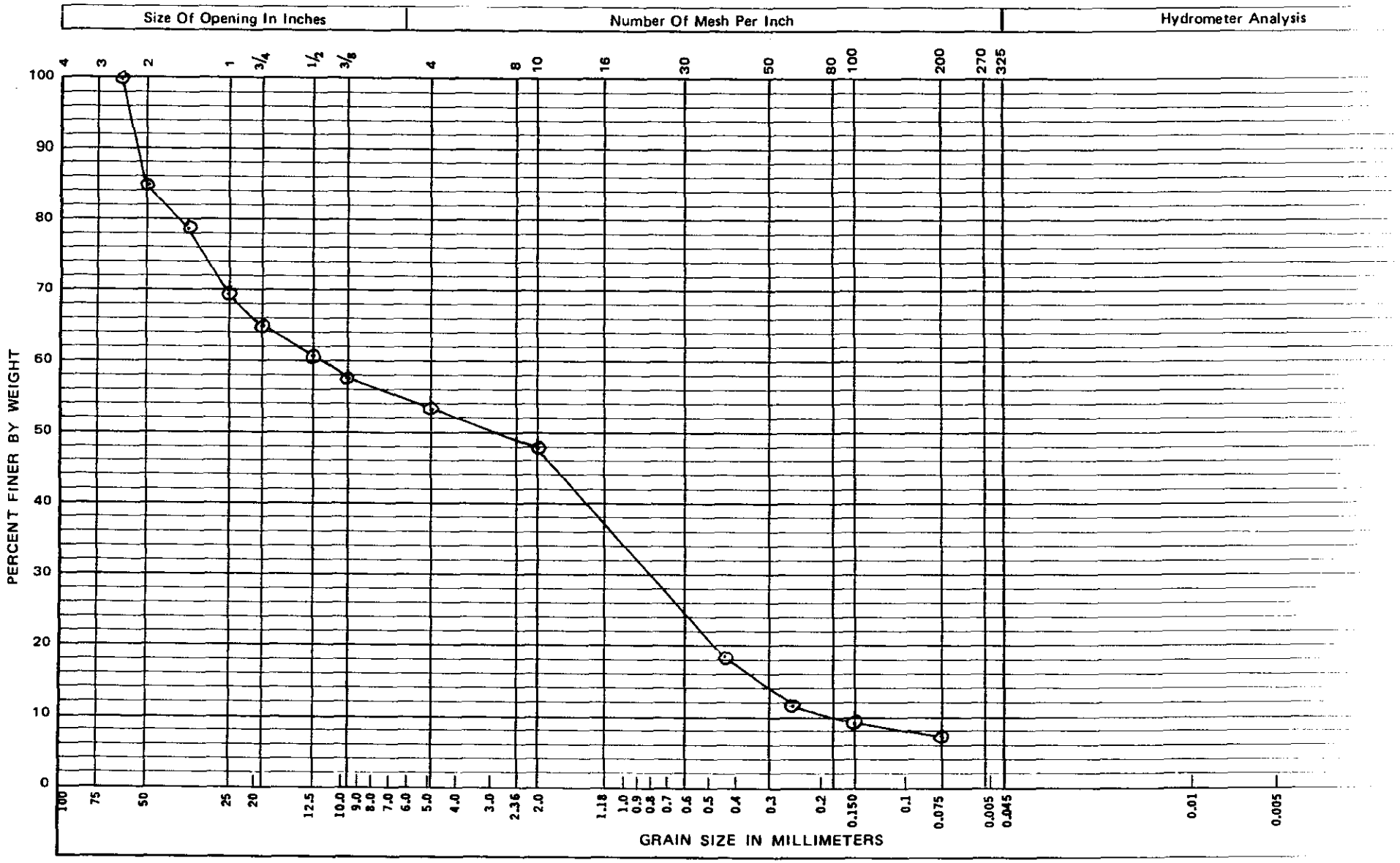
Checked By HCBenny Date 2-13-90

A-6400-204(2-87)

9212-1012

9212110013

GRAIN SIZE ANALYSIS PLOT



Specimen No. 0-061 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: ~~SANDY~~ GRAVEL SANDY RGA 2-17-90
MW 17-7

Plotted by: R.G. ALEXANDER
Date: 2-13-90

Checked by: HCBenny
Date: 2-13-90

Approved by:
N/A
N/A
Date

BD-6400-136 (9-85)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-061	5350.46	5027.41	588.48	4761.97	4438.93	7.28

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G ALEXANDER DATE 2-12-90

9212113214

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

9212215

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG Alexander	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/14/90-1/16/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-17-5	Soil	
	MW17-6	"	
	MW-17-7	"	
	MW178	"	

Analysis Requested MW-17-5 through MW-17-7 Particle Size Analysis and Moisture Content, MW-17-8 Particle Size Analysis

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

Revision 0
Date September 1986

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

MW-17-1

54-3000-022 (5 – 57)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

MW-17-2

54-3000-022 (5 – 57)

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

MW-17-4

54-3000-022 (09/88)

MW-17-5

RADIATION RELEASE

~~Bldg.~~ well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-7 37'-38'

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

~~of~~ MW-17/3000 Date 1/19/96

~~leased~~ By [redacted]
Operational Health Physics

Remarks LD β⁻ α γ

MW-17-8

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No. 0-062 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-13-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
MOISTURE	1	ETAL-14
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-8

Received By: R.G. ALEXANDER Date 2-2-90

Approved By: R.G ALEXANDER Date 2-13-90

SIEVE ANALYSIS DATA SHEET

Sample ID 0-062

Tested By R.G Alexander Date 2-13-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-90

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SILTY SAND Sieve Time 10 (min)

reduced by ☒ splitting ☐ quartering ☐ stockpile

(B) BEFORE TEST WT. N/A (A) AFTER TEST WT. N/A $\frac{B-A}{B}$ X 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A							
	3/8	160.18	∅	∅	∅	100	100
	#4		3.62	2.3	2.3	97.7	97.7
	#10		4.86	3.0	3.0	97.0	97.0
	#40		11.64	7.3	7.3	92.7	92.7
	#60		17.05	10.6	10.6	89.4	89.4
	#100		24.17	15.1	15.1	84.9	84.9
	#200		61.92	38.7	38.7	61.3	61.3

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 61.3 %

D=Original Dry Weight of Sample 160.18 g

E=Dry Weight of Sample After Washing/Sieve 61.92 g

C = <(D-E)/D> X 100

Remarks WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

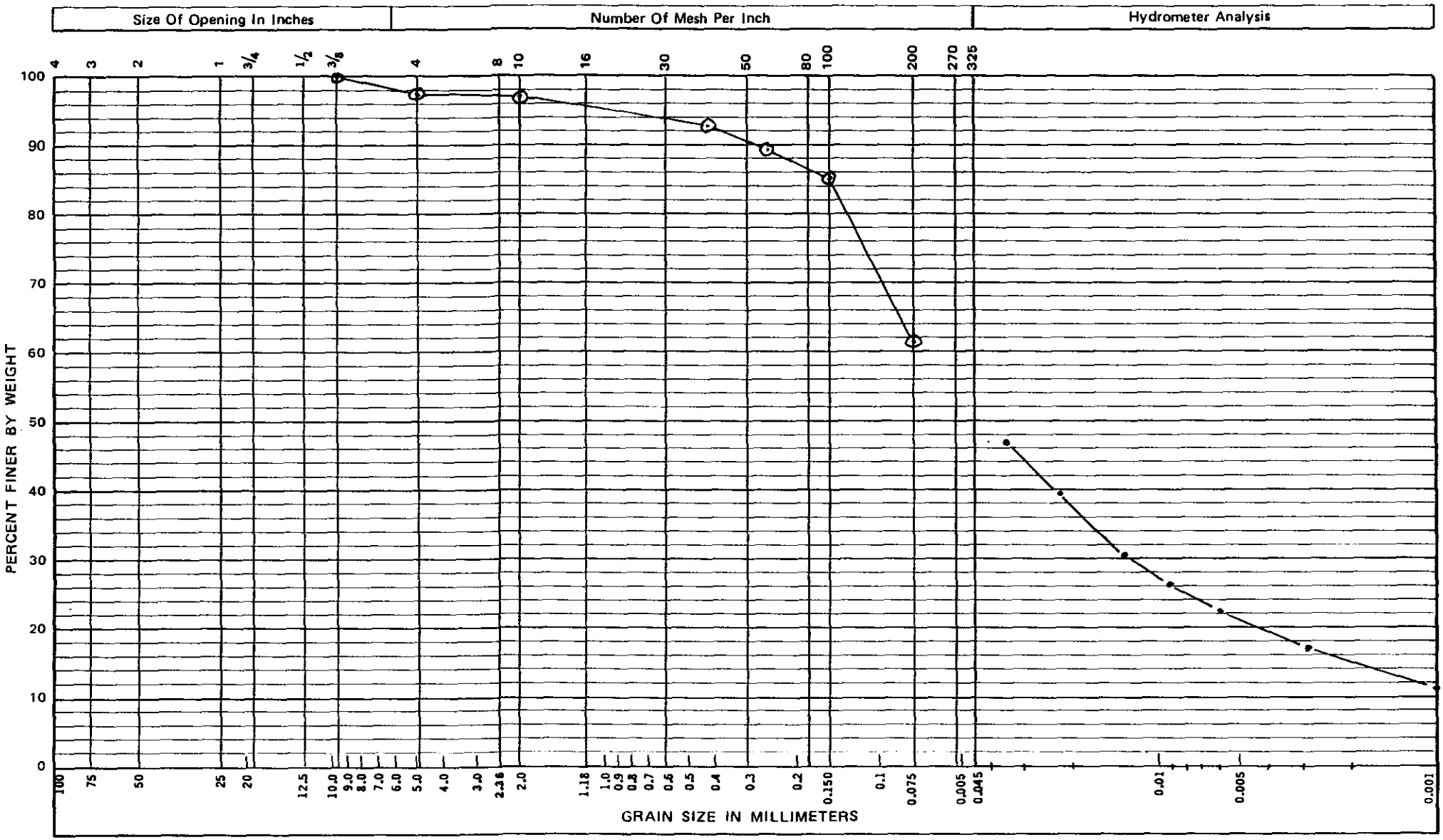
Checked By H L Benny Date 2/13/90

A-6400-204(2-87)

9212[illegible]0019

9 2 1 2 [illegible] 0 0 2 0

GRAIN SIZE ANALYSIS PLOT



Specimen No. 0-062 Procedure No. ETAC-07 Rev. 1 Date Issued 11-15-89

Sample Description: SILTY SAND
MW 17-8

Plotted by: RG ALEXANDER
Date: 2-13-90

Checked by: HL Benny
Date: 2-13-90

HYDROMETER ANALYSIS DATA SHEET

Sample ID 0-062 Page 1 of 1

Tested By HC Benny Date 2-25-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	NO.	CALIBRATION DUE DATE
Hydrometer	ETAL-1008	2-16-91
Balance	ETAL-3304	3-25-90
Thermometer/Thermocouple	ETAL-0002	2-9-91

Specific gravity of Sample 2.59

% Passing No. 10 Sieve 97.0 (%)

Hygroscopic Correction Factor Ø

WEIGHT OF SAMPLE

Wt. Container + Soil NA (g)

Wt. Container NA (g)

Wt. Soil 51.99 (g)

COMPOSITE CORRECTION

1st Reading 6 at 23.8 °C

2nd Reading NA at NA °C

HYGROSCOPIC MOISTURE CONTENT

Wt. Container + Air Dry Soil NA (g)

Wt. Container + Oven Dry Soil NA (g)

Wt. Container NA (g)

Water Content NA (%)

REMARKS

Tube D

w = 53.60

Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
2-25-90	0852	2.0	31	25	23.6	47.1	0.032
	0855	5.0	27	21	23.6	39.6	0.021
	0905	15.0	22	HCB 3-2-90 ~~26~~ 16	23.1	30.2	0.012
	0920	30.0	20	14	22.9	26.4	0.009
	0950	60.0	18	12	22.4	22.6	0.006
↓	1300	250.00	15	9	21.9	17.0	0.003
2-26-90	0850	1,440.0	12	6	21.4	11.3	0.001

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By R.G Alexander Date 3-6-90

A-6400-205 (1.87)

9212-1321

SPECIFIC GRAVITY OF SOILS DATA SHEET

Specimen/Sample No. O-062 Page 1 of 1

Test Operator R.G ALEXANDER 2-28-90

EQUIPMENT ITEM	NO.	DATE DUE
Balance	3304	3-25-90
Oven Thermometer	0001	8-16-90
Thermometer	0002	2-9-91
Pycnometer	2554	N/A

Wetting Agent "Q" WATER

	DETERMINATION NO.	1	2	3
	Drying Container No.	N/A	N/A	N/A
	Wt. Container + Oven Dry Soil, ± 0.01g	N/A		
	Wt. Container, ± 0.01g	N/A		
W_o	Wt. Oven Dry Soil, g	40.00		
	Pycnometer No.	2554		
	Wt. Pycnometer, g	135.72		
W_a	Wt. Pycnometer + Wetting Agent, g	387.07		
W_b	Wt. Pycnometer + Wetting Agent + Soil, g	411.70		
	Temperature, T_x at W_b, °C	25.2 C		
G_w	Specific Gravity of Wetting Agent at T_x	1.00		
G_t	Specific Gravity of Soil at T_x	2.60		
G_s	Specific Gravity of Soil at 20°C	2.59		

$$G_t = \frac{G_{w^*} \gamma_{w^*} W_o}{W_o + (W_a - W_b)}$$

γ_w = Unit Weight Of Water (g/cc)

$^*G_s = K \cdot G_t$

K values found in ASTM D854-58, Table 1

*NOTE $G_s = G_t$ When Test Run at 20 °c

Average Specific Gravity At 20°c	2.59

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HL Benny Date 3-1-90

A-6400-235 (9-86)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. 8

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-062	2725.74	2228.51	584.72	2141.02	1643.79	30.25

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G Alexander DATE 2-13-90

9212100223

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Jerry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

9211224

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG Alexander	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/14/90-1/16/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J.W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW-17-5	Soil	
	MW17-6	"	
	MW-17-7	"	
	MW178	"	

Analysis Requested MW-17-5 through MW-17-7 Particle Size Analysis and Moisture Content, MW-17-8 Particle Size Analysis

Special Handling and/or Storage

PART II: LABORATORY SECTION**

Received by Title Date

Analysis Required

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-1

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-2

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

MW-17-4

MW-17-5

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

MW-17-7 37-38

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By BOYD
Operational Health Physics

Remarks <D B- γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

~~of~~ MW-17/3000 ~~Date~~ Date 1/19/90

~~Released~~ By [illegible]
Operational Health Physics

Remarks <D B- γ α

54-3000-022 (09/88)

MW-17-8

TEST REQUEST FORM

Sample/Specimen No. O-063 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-13-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
HYDRAULIC CONDUCTIVITY	1	ETAL-09
ATTERBERG LIMITS	1	ETAL-18
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-9

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G ALEXANDER Date 2-13-90

9211227

HYDRAULIC CONDUCTIVITY OF SOILS DATA SHEET

Sample No. O-063 Page 1 of 5

Test Operator R.G. ALEXANDER Date 2-13-90

EQUIPMENT ITEM	NO.	DATE DUE
Balance	3304	3-25-90
Oven Thermometer	0007	8-16-90
Thermometer	N/A	N/A
Thermocouple		
Temperature Controller		
Pressure Gauge		
Pressure Transducer		
Pressure Transducer		
Back Pressure Gauge		
Pressure Transducer		
Pressure Transducer		
Calipers	5623	8-16-90
Load Frame	N/A	N/A
Data Logger		
N/A		
N/A		
N/A		

☐ Immediate (User) Calibration Performed. (Documentation To Be Attached)

Sample Preparation

PARTICLE SIZE
(Sieve Mesh Range)

N/A	To	N/A
	To	
	To	
	To	
	To	
	To	
	To	

WEIGHT

N/A	%
	%
	%
	%
	%
	%
	%
Total	100 %

OTHER COMPONENTS

N/A	%
	%
	%
Total	100 %

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By H C Benny Date 2-22-90

9211139

SAMPLE PREPARATION

Determine Weight of Samples in Container

Container No.	55
Wt. of Sample + Container, g	465.08
Wt. of Container, g	120.56
Wt. of Sample, g	344.52

Determine the Water Content of the "Air Dry" Sample

Container No.	55
Wt. Container & Wet Soil (A), g	465.08
Wt. Container & Dry Soil (B), g	373.36
Wt. of Water, g	91.72
Wt. of Container (C), g	120.56
Wt. of Dry Soil, W_s, g	252.80
Water Content (W), %	36.28

$$W = \left(\frac{A \cdot B}{B \cdot C}\right) 100$$

SAMPLE COMPONENT	SPECIFIC GRAVITY, G	LABORATORY NOTEBOOK DATA LOCATION
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HC Benny Date 2-22-90

SAMPLE COMPACTION

Compaction Method Static ☒ N/A Tamping ☒ N/A

STATIC or TAMPING	Load Applied, g/ Layer length, cm / No. Tamps per Layer/ Layer Length, cm	Layer 1	N/A	11	N/A
		2		12	
		3		13	
		4		14	
		5		15	
		6		16	
		7		17	
		8		18	
		9		19	
		10	↓	20	↓

Total No. of Layers N/A
INTACT SAMPLE IN 3" LUCITE TUBE

Tamper Foot Diameter cm	N/A
Tamper Applied Load, g	N/A
Sample Diameter, (d), cm	7.03
Sample Length, (L), cm	10.40
Sample Mold or Permeameter Weight & Compacted Sample, g	811.24
Sample Mold or Permeameter Weight, g	88.97
Weight of Compacted Sample, (E), g	722.27
Weight of Container & Uncompacted Wet Sample, (A), g	465.08
Weight of Container & Uncompacted Dry Sample, (B), g	373.36
Weight of Water, g	91.72
Weight of Container, (C), g	120.56
Weight of Dry Soil, (WS), g	252.80
Water Content, %	36.28
Compacted Bulk Density of Sample, (γm), g/cc	1.79
Compacted Sample Dry Density, (γd), g/cc	1.31

$$\gamma m = \frac{E}{(\pi)\,(d/2)^2(L)}$$

$$\gamma d = \left(\frac{\gamma m}{W + 100}\right) 100$$

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HC Benny Date 2-22-90

9212130

HYDRAULIC CONDUCTIVITY DATA SHEET

Sample ID. O-063 Page 4 of 5

Procedure No. ETAL-09 Date Issued 12-1-89

DATE	TIME			VOLUME DETERMINANTS							Operator Initials
				Effluent		Container		System	Pressure		
Year 90 (Mo/Day)	System Down (Hr: Min)	System Up (Hr: Min)	Time Change (Hr: Min)	Temp (°C)	Weight (±0.1g)	Tare (±0.1g)	Tare & Effluent (±0.1g)	Temp (°C)	Pore H_2O ~~(psi)~~ CM	Back H_2O (psi)	
2-12	—	1000	—	—	—	66.36	—	—	196.0	N/A	RGA
2-13	1030	1035	24:30	22	20.42	66.36	86.78	22	196.0	N/A	RGA
2-14	1035	1040	24:00	21	20.25	66.36	86.61	21	196.0	N/A	RGA
2-15	1040	1045	24:00	22	22.03	66.36	88.39	22	196.0	N/A	RGA
2-16	1045	STOP	24:00	22	20.75	66.36	87.11	22	196.0	N/A	RGA
STOP	TEST	—	—	—	—	—	—	—	—	—	RGA

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By H.C. Benny Date 2-22-90

HYDRAULIC CONDUCTIVITY DATA SHEET

Sample ID 0-063 Page 5 of 5

Procedure No. ETAL-09 Date Issued 12-1-89

Date Year 90 (Mo/Day)	Hydraulic Conductivity (cm/sec)	Hydraulic Gradient (cm/cm)	Effluent Analysis (Sample Number)	Effluent Analysis Lab. Notebook Location	Effluent Description	Operator Initials
2-12	START	TEST	—	—	—	RGA
2-13	3.17×10^{-7}	18.85	—	—	CLEAR	RGA
2-14	3.20×10^{-7}	18.85	—	—	CLEAR	RGA
2-15	3.49×10^{-7}	18.85	—	—	CLEAR	RGA
2-16	3.28×10^{-7}	18.85	—	—	CLEAR	RGA
STOP TEST	3.3 +/- 0.2 X	10^{-7} CM/SEC			—	RGA

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HC Benny Date 2-22-90

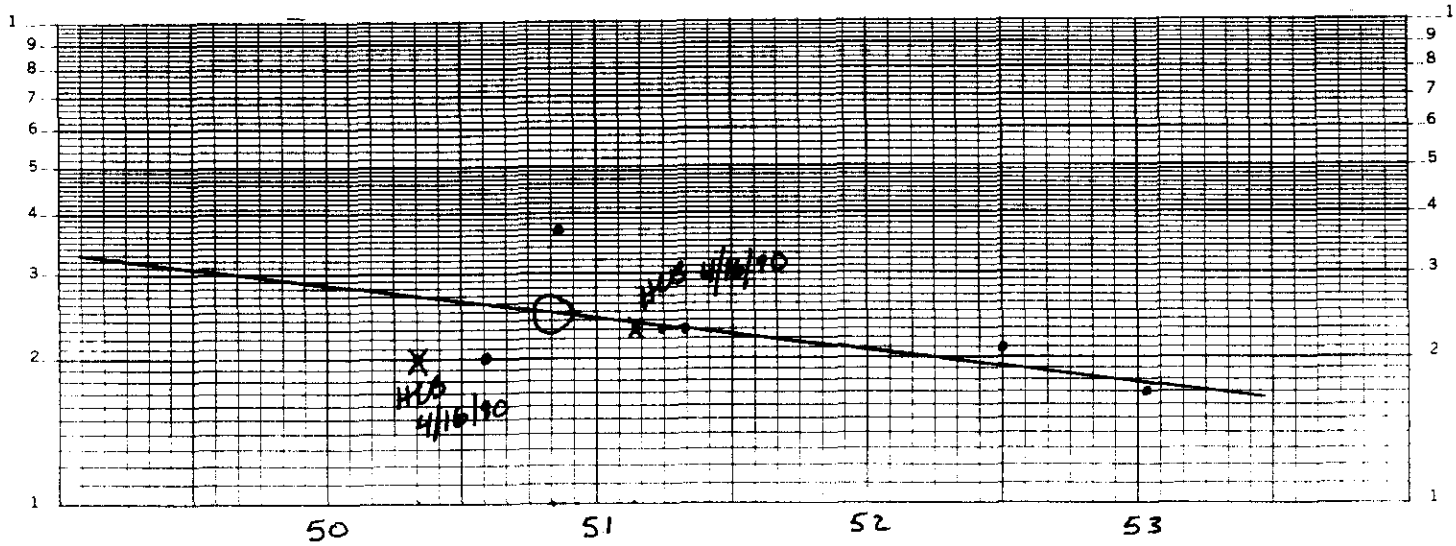
A-6400-234.3 (7-86)

PLASTIC INDEX SOILS DATA SHEET

Sample No. O-063 Page 1 of 2

Test Operator HL Benny Date 4/9/90

Thermometer No. 0007 Calibration Date 8/16/90



Liquid Limit (LL) 50.83 Graph Plastic Limit (PL) 41.43 (Avg.)

Liquid Limit (LL) NA One Point Moisture (PL) 43.29 % 40.80 % 40.21 %

Moisture (LL) 50.83 % Plastic Index (PI)* 9.40

*PI = LL − PL

Remarks

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPIATELY TRAINED AND ULITIZED CALIBRATED TEST INSTRUMENTS. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THIS DATA. 4/14/90

9212733

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-018 REV. NO. 0

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8/16/90

Blows	SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
	0-063-1	25.58	23.87	19.92	5.66	3.95	43.29
	-2	21.34	20.63	18.89	2.45	1.74	40.80
	-3	22.64	21.51	18.70	3.94	2.81	40.21
					Average % Water		41.43
23	0-063-4	31.18	27.16	19.34	11.84	7.82	51.41
23	-5	32.67	28.28	19.71	12.96	8.57	51.23
20	-6	30.07	26.54	19.57	10.50	6.97	50.65
21	-7	35.62	30.17	19.79	15.83	10.38	52.50
37	-8	33.40	28.62	19.22	14.18	9.40	50.85
17	-9	34.46	29.42	19.92	14.54	9.50	53.05

JDB 4/16/90

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: HC Berry DATE 4/16/90

9213134

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Jerry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

Chain of Possession

Relinquised by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER RG Alexander	2-2-90 / 10:20
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:

A-6000-407 (07/89)

9211235

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/19/90-1/24/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J. W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW17-9	Soil	
	MW17-10	"	
	MW17-11	"	
	MW17-12	"	

Analysis Requested MW17-9 Permeability and atterberg Limits, MW17-10 through MW-17-12 Particle Size Analysis

Special Handling and/or Storage MW-17-9 does not have liner. Permeability must be done with flexible wall permeameter or must be cored.

PART II: LABORATORY SECTION**

Received by _____ Title _____ Date _____

Analysis Required _____

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

RADIATION RELEASE

~~BLDG.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-1

RADIATION RELEASE

~~BLDG.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd
RADIATION MONITORING

REMARKS: <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (5 – 57)

MW-17-2

MW-17-3

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

MW-17-4

MW-17-5

RADIATION RELEASE

~~Bldg.~~ Well #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-6

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

9 2 1 - 0 2 3 7

MW-17-7 37-38

RADIATION RELEASE

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

DRILL SITE

RADIATION RELEASE

~~Bldg.~~ MW-17/3000 Date 1/19/90

Released By [illegible]
Operational Health Physics

Remarks <D β⁻ γ α

54-3000-022 (09/88)

MW-17-8

MW-17-9

RADIATION RELEASE

~~Bldg.~~ MW-17 Date 01-20-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

MW-17-10

RADIATION RELEASE

~~Bldg.~~ MW-17 Date 01-20-90

Released By Boyd
Operational Health Physics

Remarks <D β⁻ γ α on outside of bag.

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No. 0-064 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. LINDBERG Date 2-13-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-10

Received By: R.G ALEXANDER Date 2-2-90

Approved By: R.G. ALEXANDER Date 2-13-90

SIEVE ANALYSIS DATA SHEET

Sample ID O-064 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-13-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SILTY SAND Sieve Time 10 (min)

reduced by ☒ splitting ☐ quartering ☐ stockpile

(B) (A)

BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B}$ X 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A							
	#4	129.01	∅	∅	∅	100	100
	#10		0.74	0.6	0.6	99.4	99.4
	#40		20.31	15.7	15.7	84.3	84.3
	#60		33.80	26.2	26.2	73.8	73.8
	#100		42.66	33.1	33.1	66.9	66.9
	#200		52.97	41.1	41.1	58.9	58.9

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 58.9 %

D=Original Dry Weight of Sample 129.01 g

E=Dry Weight of Sample After Washing/Sieve 52.97 g

C = <(D-E)/D> X 100

Remarks

WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

Checked By H.L. Benny Date 2-13-90

A-6400-204(2-87)

9212239

HYDROMETER ANALYSIS DATA SHEET

Sample ID O-064 Page 1 of 1

Tested By H L Benny Date 2-25-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	NO.	CALIBRATION DUE DATE
Hydrometer	1000	2-16-91
Balance	3304	3-25-90
Thermometer/Thermocouple	0002	2-9-91

Specific gravity of Sample 2.49

% Passing No. 10 Sieve 99.4 (%)

Hygroscopic Correction Factor Ø

WEIGHT OF SAMPLE

Wt. Container + Soil NA (g)

Wt. Container NA (g)

Wt. Soil 50.00 (g)

COMPOSITE CORRECTION

1st Reading 6 at 23.8 °C

2nd Reading NA at NA °C

HYGROSCOPIC MOISTURE CONTENT

Wt. Container + Air Dry Soil NA (g)

Wt. Container + Oven Dry Soil NA (g)

Wt. Container NA (g)

Water Content NA (%)

REMARKS

Tube E

W= 50.30

Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
2-25-90	0940	2.0	35	29	23.8	59.4.	0.031.
	0943	5.0	30	24	23.8	49.1.	0.021
	0953	15.0	25	19	23.4	38.9.	0.012.
	1008	30.0	21	15	22.8	30.7.	0.009.
	1038	60.0	14	8	22.3	16.4.	0.007.
↓	1348	250.00	11	5	22.3	10.2.	0.003.
2-26-90	0938	1,440.0	9	3	21.7	6.1.	0.001.

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By R.G. Alexander Date 3-6-90

A-6400-205 (1.87)

9212240

SPECIFIC GRAVITY OF SOILS DATA SHEET

Specimen/Sample No. O-064 Page 1 of 1

Test Operator RG ALEXANDER 2-28-90

EQUIPMENT ITEM	NO.	DATE DUE
Balance	3304	3-25-90
Oven Thermometer	0007	8-16-90
Thermometer	0002	2-9-91
Pycnometer	2554	N/A

Wetting Agent "Q" WATER

	DETERMINATION NO.	1	2	3
	Drying Container No.	N/A	N/A	N/A
	Wt. Container + Oven Dry Soil, ± 0.01g	N/A		
	Wt. Container, ± 0.01g	N/A		
* W_o	Wt. Oven Dry Soil, g	40.00		
	Pycnometer No.	2554		
	Wt. Pycnometer, g	135.72		
W_a	Wt. Pycnometer + Wetting Agent, g	387.01		
W_b	Wt. Pycnometer + Wetting Agent + Soil, g	411.07		
	Temperature, T_x at W_b, °C	24.0 C		
G_w	Specific Gravity of Wetting Agent at T_x	1.00		
G_t	Specific Gravity of Soil at T_x	2.50		
G_s	Specific Gravity of Soil at 20°C	2.49		

* GRAY / TAN SILTY SAND

$$G_t = \frac{G_{w^*} \gamma_{w^*} W_o}{W_o + (W_a - W_b)}$$

γ_w = Unit Weight Of Water (g/cc)

*$G_s = K \cdot G_t$

K values found in ASTM D854-58, Table 1

*NOTE $G_s = G_t$ When Test Run at 20 °c

Average Specific Gravity At 20°c	2.49

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

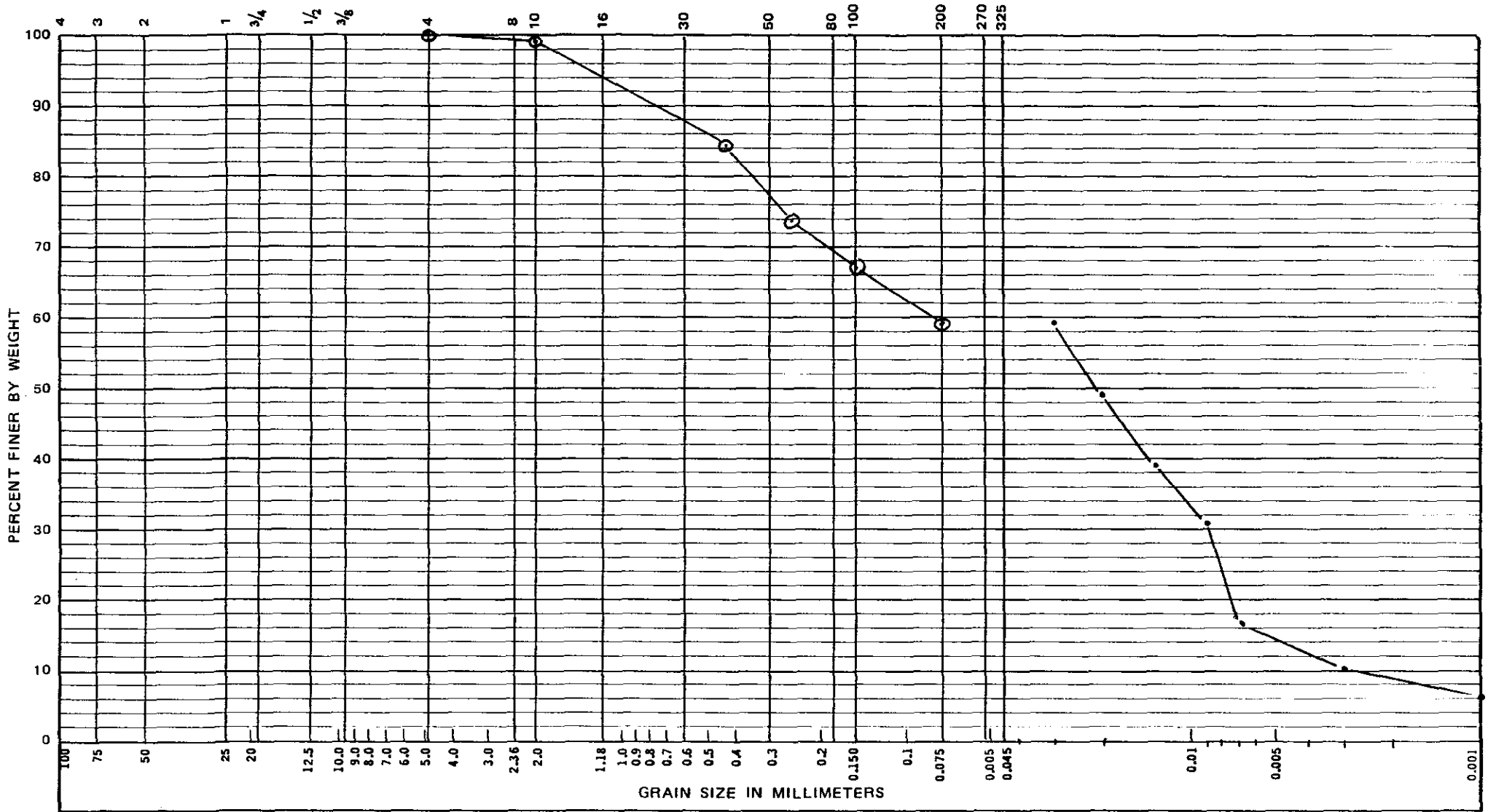
Checked By HL Benny Date 3-1-90

A-6400-235 (9-86)

9212-C41

9212 0242

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-064 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: SILTY SAND
MW 17-10

Plotted by: R.G ALEXANDER
Date: 2-13-90

Checked by: HL Banny
Date: 2-13-90

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 6007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
6-064	3946.60	3012.32	589.39	3356.61	2422.93	38.54

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R. G ALEXANDER DATE 2-13-90

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

9211-2244

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/19/90-1/20/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J. W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW17-9	Soil	
	MW17-10	"	
	MW17-11	"	
	MW17-12	"	

Analysis Requested MW17-9 Permeability and atterberg Limits, MW-17-10 through MW-17-12 Particle Size Analysis

Special Handling and/or Storage MW-17-9 does not have liner. Permeability must be done with flexible wall permeameter or must be cored.

PART II: LABORATORY SECTION**

Received by _____ Title _____ Date _____

Analysis Required _____

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

Revision 0
Date September 1986

RADIATION RELEASE

MW-17-1

~~BLDG.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd

RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (5-57)

RADIATION RELEASE

MW-17-2

~~BLDG.~~ WELL SITE #17 DATE 01-11-90

RELEASED BY Boyd

RADIATION MONITORING

REMARKS: <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (5-57)

RADIATION RELEASE

MW-17-3

~~Bldg.~~ WELL SITE #17 Date 01-11-90

Released By Boyd

Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-4

~~Bldg.~~ WELL SITE #17 Date 01-11-~~89~~90

Released By Boyd

Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-5

~~Bldg.~~ Well #17 Date 01-12-90

Released By Boyd

Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-6

~~Bldg.~~ WELL #17 Date 01-12-90

Released By Boyd

Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-7 37'-38'

~~Bldg.~~ WELL #17 Date 01-12-90

Released By BOYD

Operational Health Physics

Remarks <D β γ α ON OUTSIDE OF BAG.

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-8

DRILL SITE MW-17/3000 ~~Area~~ Date 1/19/90

Released By Weeds

Operational Health Physics

Remarks <D β γ α

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-9

~~Bldg.~~ MW-17 Date 01-20-90

Released By Boyd

Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

RADIATION RELEASE

MW-17-10

~~Bldg.~~ MW-17 Date 01-20-90

Released By Boyd

Operational Health Physics

Remarks <D β γ α on outside of bag.

54-3000-022 (09/88)

9 2 1 1 2 2 4 5

TEST REQUEST FORM

Sample/Specimen No. 0-065 Cost Code/Work Order No. ED332

Requested By: Org. 80232 Person J. LINDBERG Date 2-13-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW 17-11

Received By: R.G ALEXANDER Date 2-2-90

Approved By: RG ALEXANDER Date 2-13-90

9212-0247

SIEVE ANALYSIS DATA SHEET

Sample ID 0-065 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-13-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-90

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SILTY SAND Sieve Time 10 (min)

reduced by ☒ splitting ☐ quartering ☐ stockpile

BEFORE TEST WT. (B) N/A AFTER TEST WT. (A) N/A $\frac{B-A}{B} \times 100$ = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A							
	#10	128.84	Ø	Ø	Ø	100	100
	#40		2.71	2.1	2.1	97.9	97.9
	#60		54.57	42.4	42.4	57.6	57.6
	#100		93.89	72.9	72.9	27.1	27.1
	#200		110.35	85.6	85.6	14.4	14.4

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 14.4 %

D=Original Dry Weight of Sample 128.84 g

E=Dry Weight of Sample After Washing/Sieve 110.35 g

C = <(D-E)/D> X 100

Remarks

WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

Checked By H L Benny Date 2-13-90

A-6400-204(2-87)

9212-3248

HYDROMETER ANALYSIS DATA SHEET

Sample ID 0-065 Page 1 of 1

Tested By HL Benny Date 2-25-90

Procedure ETAL-07 Rev 1 Date Issued 11-15-89

EQUIPMENT ITEM	NO.	CALIBRATION DUE DATE
Hydrometer	ETAL-1000	2-16-91
Balance	ETAL-3304	3-25-90
Thermometer/Thermocouple	ETAL-0002	2-9-91

Specific gravity of Sample 2.61

% Passing No. 10 Sieve 100 (%)

Hygroscopic Correction Factor Ø

WEIGHT OF SAMPLE

Wt. Container + Soil NA (g)

Wt. Container NA. (g)

Wt. Soil 100.00 (g)

HYGROSCOPIC MOISTURE CONTENT

Wt. Container + Air Dry Soil NA (g)

Wt. Container + Oven Dry Soil NA (g)

Wt. Container NA (g)

Water Content NA (%)

COMPOSITE CORRECTION

1st Reading 6 at 23.8 °C

2nd Reading NA at NA °C

REMARKS

Tube F

W= 100.00

Date	Clock time	Elapsed time (min)	Hydrometer reading	Hydrometer with composite correction	Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
2-25-90	1000	2.0	23	17	23.8	17.2	0.033
	1003	5.0	20	14	23.7	14.1	0.022
	1013	15.0	17	11	23.4	11.1	0.013
	1028	30.0	15	9	23.1	9.1	0.009
	1058	60.0	14	HLB 2-26-90 8	22.4	8.1	0.006
↓	1408	250.00	13	7	22.6	7.1	0.003
2-26-90	0958	1,440.0	10	4	21.6	4.0	0.001

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By R.G. Alexander Date 3-6-90

A-6400-205 (1.87)

9212149

SPECIFIC GRAVITY OF SOILS DATA SHEET

Specimen/Sample No. 0-065 Page 1 of 1

Test Operator R. G. ALEXANDER 2-28-90

EQUIPMENT ITEM	NO.	DATE DUE
Balance	3304	3-25-90
Oven Thermometer	0007	8-16-90
Thermometer	0002	2-9-91
Pycnometer	2554	N/A

Wetting Agent "Q" WATER

	DETERMINATION NO.	1	2	3
	Drying Container No.	N/A	N/A	N/A
	Wt. Container + Oven Dry Soil, ± 0.01g	N/A .__	.__	.__
	Wt. Container, ± 0.01g	N/A .__	.__	.__
* W_o	Wt. Oven Dry Soil, g	40.00	.__	.__
	Pycnometer No.	2554		
	Wt. Pycnometer, g	135.72	.__	.__
W_a	Wt. Pycnometer + Wetting Agent, g	387.09	.__	.__
W_b	Wt. Pycnometer + Wetting Agent + Soil, g	411.81	.__	.__
	Temperature, T_x at W_b, °C	25.0 C	.	.
G_w	Specific Gravity of Wetting Agent at T_x	1.00	_.__	_.__
G_t	Specific Gravity of Soil at T_x	2.62	_.__	_.__
G_s	Specific Gravity of Soil at 20°C	2.61	_.__	_.__

* GRAY/TAN SILTY SAND

$$G_t = \frac{G_w \cdot \gamma_w \cdot W_o}{W_o + (W_a - W_b)}$$

γ_w = Unit Weight Of Water (g/cc)

*$G_s = K \cdot G_t$

K values found in ASTM D854-58, Table 1

*NOTE $G_s = G_t$ When Test Run at 20 °c

Average Specific Gravity At 20°c	2.61

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

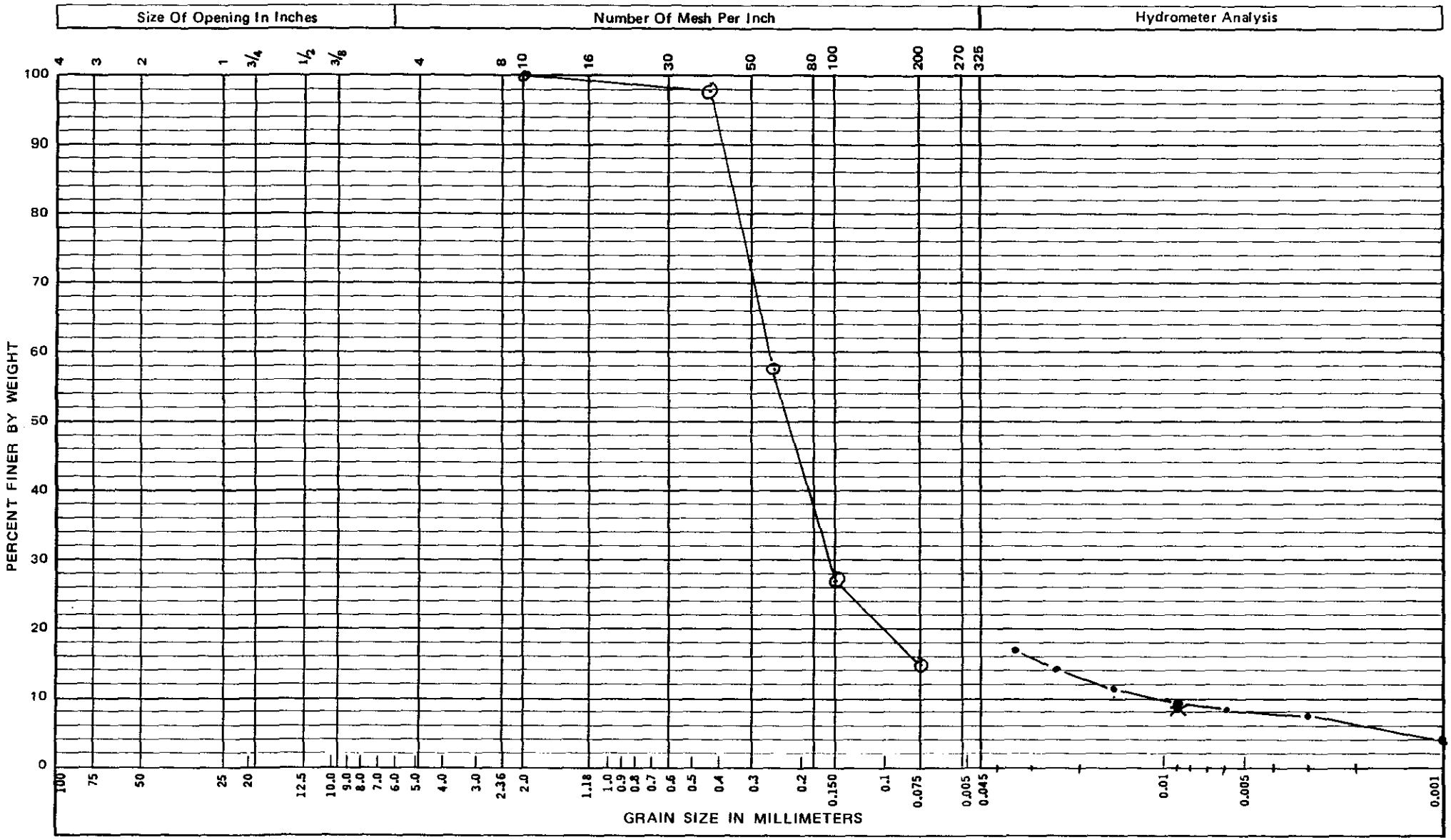
Checked By HL Benny Date 3-1-90

A-6400-235 (9-86)

9212 [illegible] 750

9 2 1 2 0 9 5 1

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-065 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: SILTY SAND MW 17-11	Plotted by: R.G ALEXANDER Date: 2-13-90	Checked by: HC Benny Date: 2-13-90

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-065	5092.98	4130.15	584.00	4508.98	3546.15	27.15

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R. G. ALEXANDER DATE 2-13-90

9212 [illegible] 52

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

Chain of Possession

Relinquised by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER RG Alexander	2-2-90 / 10:20
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:
Relinquised by:	Received by:	Date/Time:

A-6000-407 (07/89)

9212153

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/19/90-1/20/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J. W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW17-9	Soil	
	MW17-10	"	
	MW17-11	"	
	MW17-12	"	

Analysis Requested MW17-9 Permeability and atterberg Limits, MW17-10 through MW-17-12 Particle Size Analysis

Special Handling and/or Storage MW-17-9 does not have liner. Permeability must be done with flexible wall permeameter or must be cored.

PART II: LABORATORY SECTION**

Received by _____ Title _____ Date _____

Analysis Required _____

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

110-112'
RADIATION RELEASE

~~Bag~~ MW-17 Date 01-20-90

Released By Boyd
Operational Health Physics

Remarks <D β-γ-α on outside of bag

MW-17-11

54-3000-[illegible]

MW-SURVEYED BY RM FOR SHIPMENT

17-112

Dose rate -- side of container
Max. dose rate through the container ____ mr-hr
Dose rate to handle container .05 < ____ mr-hr
Dose rate at nearest approach on conveyance ____ mr-hr
External contamination <D ____ mr-hr
SWP and RSR required Yes ☐ No ☑

SURVEYED BY [redacted]
DATE 1-20-90

54-6800-009(1-86)

9212[illegible]0055

TEST REQUEST FORM

Sample/Specimen No. O-066 Cost Code/Work Order No. ED 332

Requested By: Org. 80232 Person J. ANDBERG Date 2-13-90

Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
HYDROMETER	1	ETAL-07 (IF REQ)
N/A	N/A	N/A
N/A	N/A	N/A

Remarks FIELD SAMPLE MW-17-12

Received By: R.G ALEXANDER Date 2-2-90

Approved By: RG ALEXANDER Date 2-13-90

9213256

SIEVE ANALYSIS DATA SHEET

Sample ID 0-066 Page 1 of 1

Tested By R.G. ALEXANDER Date 2-13-90

Procedure ETAC-07 Rev 1 Date Issued 11-15-90

EQUIPMENT ITEM	CALIBRATION NO.	DATE DUE
Balance	3304	3-25-90
Thermometer	0007	8-16-90
N/A	N/A	N/A

Sample Description SICTY SAND Sieve Time 10 (min)

reduced by ☒ splitting ☐ quartering ☐ stockpile

(B) (A)
BEFORE TEST WT. N/A AFTER TEST WT. N/A $\frac{B-A}{B}$ x 100 = N/A % LOSS

Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative % Retained	Cumulative % Pass	% Pass
N/A							
	#10	139.59	Ø	Ø	Ø	100	100
	#40		8.65	6.2	6.2	93.8	93.8
	#60		81.89	58.7	58.7	41.3	41.3
	#100		116.72	83.6	83.6	16.4	16.4
	#200		127.13	91.1	91.1	8.9	8.9

Finess Modules (FM) N/A (See ASTM C 136-83, Section 8.2)

MATERIALS FINER THAN NO. 200 SIEVE BY WASHING

C=Percentage of Material Passing a 200 Sieve 8.9 %

D=Original Dry Weight of Sample 139.59 g

E=Dry Weight of Sample After Washing/Sieve 127.13 g

C = <(D-E)/D> X 100

Remarks
WASH FINE GRADING

ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS

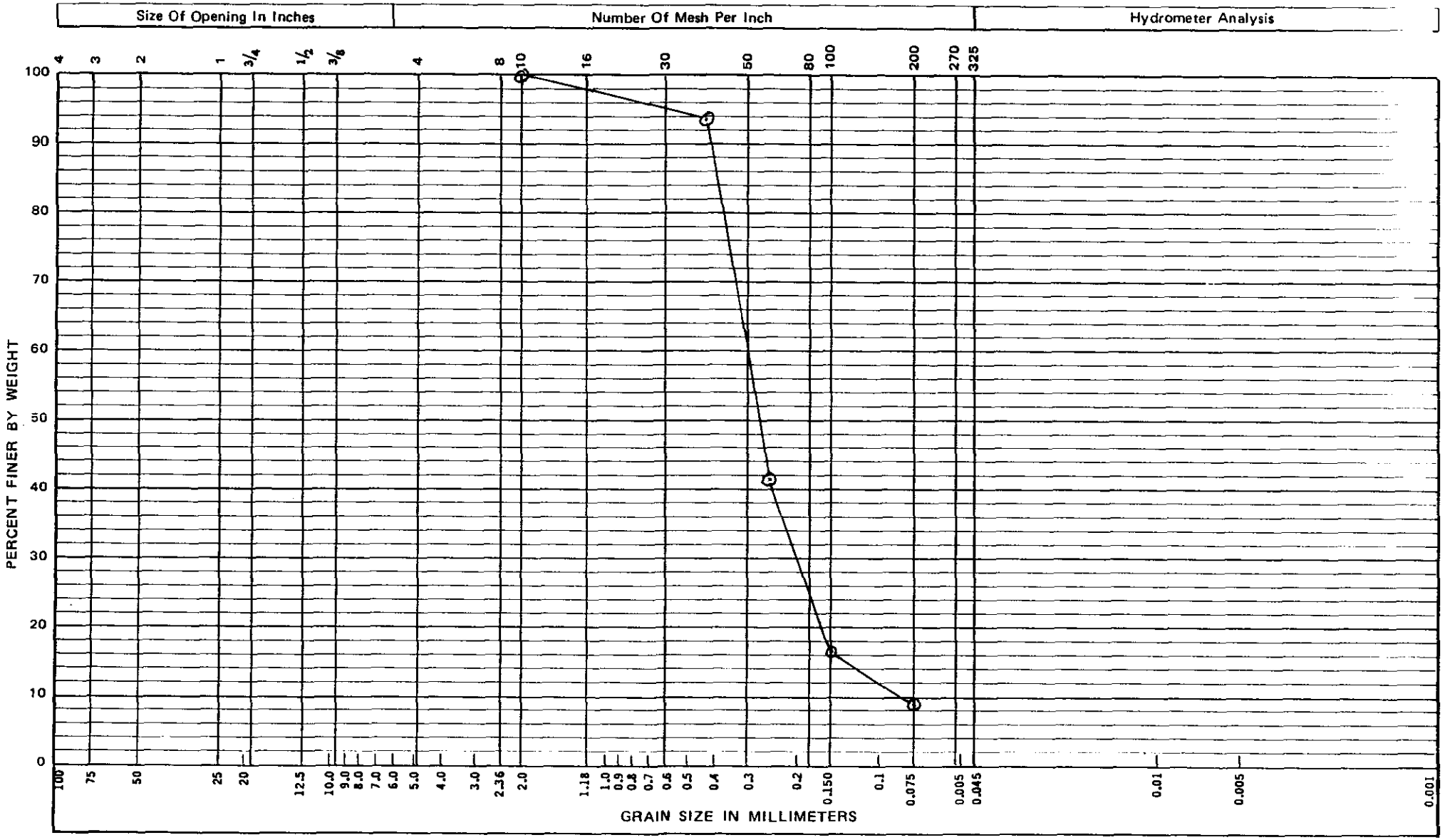
Checked By HC Benny Date 2-13-90

A-6400-204(2-87)

9212-1-0257

9 2 1 2 [illegible] 0 7 5 8

GRAIN SIZE ANALYSIS PLOT



Specimen No. O-066 Procedure No. ETAL-07 Rev. 1 Date Issued 11-15-89

Sample Description: SILTY SAND
MW-17-12

Plotted by: R.G ALEXANDER
Date: 2-13-90

Checked by: HL Benny
Date: 2-13-90

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0007 CALIBRATION DUE DATE 8-16-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-066	3697.80	3075.12	578.06	3119.74	2497.06	24.94

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R. G. ALEXANDER DATE 2-13-90

Westinhouse Hanford Company	CHAIN OF CUSTODY

Company Contact JW Lindberg Telephone 6-5005

Sample Collected by DC Weekes Date 1/11/90 - 1/20/90 Time NA

Sample Locations MW-17

Ice Chest No. NA Field Logbook and Page No. WHC-N-306-2, p. 27-35

Remarks CERCLA, 1100-EM-1 operable Unit, Groundwater Monitoring Wells

Bill of Lading No. NA Offsite Property No. NA

Method of Shipment Hand carry

Shipped to Verry Alexander, WHC, 2101-M Physical Testing Laboratory

Sample Identification

MW-17-1 double-lined plastic bag	
MW-17-2 " " " "	
MW-17-3 " " " "	
MW-17-4 " " " "	
MW-17-5 " " " "	
MW-17-6 " " " "	
MW-17-7 " " " "	
MW-17-8 " " " "	
MW-17-9 " " " "	
MW-17-10 " " " "	
MW-17-11 " " " "	
MW-17-12 triple-lined plastic bag	

9211-0359

Chain of Possession

Relinquished by:	Received by:	Date/Time:
DC Weekes	RG ALEXANDER RG Alexander	2-2-90 / 10:20
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (07/89)

SAMPLING ANALYSIS REQUEST

Part I: Field Section

Collector DC Weekes Date Sampled 1/19/90-1/24/90 Time NA hours

Affiliation of Sampler WHC

Address 450 Hills St. Richland WA 99352
number street city state zip

Telephone (509) 376-5005 Company Contact J. W. Lindberg

LABORATORY SAMPLE NUMBER	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**
	MW17-9	Soil	
	MW17-10	"	
	MW17-11	"	
	MW17-12	"	

Analysis Requested MW17-9 Permeability and atterberg Limits, MW17-10 through MW-17-12 Particle Size Analysis

Special Handling and/or Storage MW-17-9 does not have liner. Permeability must be done with flexible wall permeameter or must be cored.

PART II: LABORATORY SECTION**

Received by _____ Title _____ Date _____

Analysis Required _____

* Indicate whether sample is soil, sludge, etc.
**Use back of page for additional information relative to sample location.

Figure 9-19. Example of hazardous waste sample analysis sheet.

Revision 0
Date September 1986

110-112

RADIATION RELEASE

~~Bldg~~ MW-17 Date 01-20-90

Released By Boyd
Operational Health Physics

Remarks <D β-γ α on outside of ~~Bag~~

MW-17-11

54-3000-... (08...)

MW SURVEYED BY RM FOR SHIPMENT

Dose rate – side of container ______mr-hr

Max. dose rate through the container <.05 ______mr-hr

Dose rate to handle container ______mr-hr

Dose rate at nearest approach on conveyance ______mr-hr

External contamination <D

SWP and RSR required? Yes ☐ No ☑

SURVEYED BY [redacted]

DATE 1-2?-90

54-6800-009(1-86)

9212170762